The invention claimed is

~~[0001]~~ 1. (Currently Amended) A nanocomposite produced by the process comprising:

dissolving a metal ionsalt in a solvent system to form a metal ion salt solution, wherein said solvent system is common to said metal ion salt and a polymer;

adding an epoxide to said metal ion salt solution to form an epoxide-containing metal ion salt solution;

dissolving said polymer in said solvent system to form a polymer solution;

adding a portion of the polymer solution to the polymer-containing metal ion salt solution to form a polymer-containing, epoxide-containing metal ion salt solution; and

stirring said a polymer-containing, epoxide-containing metal ion salt solution until said solution gels.

~~[0002]~~ 2. (Currently Amended) The nanocomposite produced by the process recited in Claim ~~10~~ 1, further comprising:

adding a fuel metal powder to said polymer-containing, epoxide-containing metal ion salt solution while stirring, wherein said addition of the fuel metal powder occurs before said polymer-containing, epoxide-containing metal ion salt solution gels.

~~[0003]~~ 3. (Currently Amended) The nanocomposite recited in Claim ~~10~~ 1, wherein said metal oxide is Fe_2O_3.

~~[0004]~~ 4. (Currently Amended) The nanocomposite produced by the process recited in Claim ~~10~~ 1, wherein said polymer is a fluoroelastomer.

~~[0005]~~ 5. (Currently Amended) The nanocomposite produced by the process recited in Claim ~~11~~ 2, wherein said fluoroelastomer is Viton®A, A-100.

~~[0006]~~ 6. (Currently Amended) The nanocomposite produced by the process recited in Claim ~~10~~ 1, wherein Viton®A, A-100 is soluble in said solvent system.

~~[0007]~~ 7. (Currently Amended) The nanocomposite produced by the process recited in Claim ~~10~~ 1, wherein said solvent system is a mixture of ethanol and acetone.

~~[0008]~~ 8. (Currently Amended) The nanocomposite produced by the process recited in Claim ~~11~~ 2, wherein said fuel metal powder is Al, Mg, B, Ti, Zr or mixtures thereof.

~~[0009]~~ 9. (Currently Amended) The nanocomposite produced by the process recited in Claim ~~11~~ 2, wherein said fuel metal powder is ultra fine grain aluminum.

~~[00010]~~ 10. (Currently Amended) ~~'~~A nanocomposite comprising:

an inorganic sol-gel polymer phase comprising at least one metal-oxide and at least one epoxide; and

an interpenetrating organic polymer phase entwined in said inorganic sol-gel phase.

~~[00011]~~ 11. (Currently Amended) The nanocomposite recited in Claim ~~19~~ 10, wherein said inorganic sol-gel polymer phase further comprises:

A fuel metal powder.

~~[00012]~~ 12. (Currently Amended) The nanocomposite recited in Claim ~~19~~ 10, wherein said metal oxide is Fe_2O_3.

~~[00013]~~ 13. (Currently Amended) The nanocomposite recited in Claim ~~19~~ 10, wherein said polymer is a fluoroelastomer.

~~[00014]~~ 14. (Currently Amended) The nanocomposite recited in Claim ~~22~~ 13, wherein said fluoroelastomer is Viton®A, A-100 .

~~[00015]~~ 15. (Currently Amended) The nanocomposite recited in Claim ~~20~~ 11, wherein said fuel metal powder is Al, Mg, B, Ti, Zr or mixtures thereof.

~~[00016]~~ 16. (Currently Amended) The nanocomposite recited in Claim ~~20~~ 11, wherein said fuel metal powder is ultra fine grain aluminum.